

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-003121**Date Inspected:** 15-Jun-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 2300**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

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|------------------------------------|----------------------------|----------------------------------|-------|--------|
| CWI Name: | Lui Hua jie, An Qing Xiang | CWI Present: | Yes | No |
| Inspected CWI report: | Yes No N/A | Rod Oven in Use: | Yes | No N/A |
| Electrode to specification: | Yes No N/A | Weld Procedures Followed: | Yes | No N/A |
| Qualified Welders: | Yes No N/A | Verified Joint Fit-up: | Yes | No N/A |
| Approved Drawings: | Yes No N/A | Approved WPS: | Yes | No N/A |
| | | Delayed / Cancelled: | Yes | No N/A |
| Bridge No: | 34-0006 | Component: | Tower | |

Summary of Items Observed:

Caltrans Quality Assurance (QA) Inspector, Ken Jobes, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, to randomly monitor welding and Quality Control (QC) functions. While on site, the QA Inspector observed and/or discovered the following:

New Tower Bay 1

The Caltrans QA Inspector randomly observed the magnetic particle examination (MT) of the root pass on Weld Nos. SSD1-SA179D/E-21, 16, 29B, 27B, 26B and SSD1-SA179E/E-4B, 15, 1B, 10, 6 by ZPMC Nondestructive Examination (NDE) technician, Bu Tin Yui. The ten weld numbers are actually on one weld joint. The "A" welds are complete joint penetration (CJP) and the remaining welds are partial joint penetration (PJP). They alternate CJP/PJP along the joint. After acceptance of MT by ZPMC, the QA Inspector observed the application of preheat using resistance heaters. Later, the machine Submerged Arc Welding (SAW) of fill passes on these welds was observed. They are part of Skin Plate Face "C". The welding was performed in the flat groove (1G) welding position by two welding operators; Xu Yan (I. D. No. 052917) and Xi Xiu shui (I. D. 040489). Welding Procedure Specification (WPS) WPS-B-T-2221-B-U3c-S was used for the CJP portion of the weld and WPS-B-T-2312-B-P3-S was used for the PJP portion. Certified Welding Inspector (CWI), Liu Hua jie (CWI No. 07120741), was present during the welding, as was ABF QA Inspector, Wei Jian Bo. The Caltrans QA Inspector verified the qualifications of the welding operators, and that the electrode/flux classification, diameter of electrode, amperage, voltage, travel speed, and preheat/interpass temperatures were within the specified ranges on the applicable WPS.

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The Caltrans QA Inspector randomly observed the machine Submerged Arc Welding (SAW) of fill passes on Weld Nos. ESD1-SA294G/G-57B, 56 and ESD1-SA294F/G-157, 160, Skin Plate Face "C". The four weld numbers are actually on one weld joint. The "A" welds are CJP and the remaining welds are PJP. They alternate CJP/PJP along the joint. The welding operator was Sun Bing fa (I. D. No. 062046). Two Welding Procedure Specifications (WPS) were also being used. WPS-B-T-2221-B-U3c-S was used for the CJP portion of the weld and WPS-B-T-2321-B-P3-S was used for the PJP. Certified Welding Inspector (CWI), An Qing Xiang (CWI No. 07120651), was present during the welding, as was ABF QA Inspector, Wang Cheng jun. The Caltrans QA Inspector verified the qualifications of the welding operator, and that the electrode/flux classification, diameter of electrode, amperage, voltage, travel speed, and preheat/interpass temperatures were within the specified ranges on the applicable WPS. .

All above observations appeared to meet the requirements of the job specifications.

The Caltrans QA Inspector also performed a visual examination (VT) on Weld Nos. 001 and 002 on Deck Panel, DP561-001. Portions that failed to meet the job specifications were marked, but not recorded on the Caltrans QA Visual Weld Inspection Report for the OBG Deck Panels. ZPMC QC had not performed their visual inspection prior to the QA Inspector's examination.



Summary of Conversations:

As identified within the contents of this report.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By: Jobes, Kenneth

Quality Assurance Inspector

Reviewed By: Carreon, Albert

QA Reviewer